

IN THE SPECIFICATION:

Please amend the specification as follows:

Please insert the following paragraph beginning at page 1, line 5, as follows:

-- This application is a divisional application of copending U.S. patent application number 09/948,041, filed September 7, 2001, which is a continuation application of U.S. patent application number 09/342,897, filed June 29, 1999, now U.S. Patent No. 6,310,934, issued October 30, 2001, which is a divisional application of U.S. patent application number 08/813,349, filed March 7, 1997, now U.S. Patent No. 6,084,938, issued July 4, 2000. --

Page 1, delete the entire paragraph beginning on line 13, and replace it with the following new paragraph.

-- In solid-state devices, such as ~~LSIs~~ LSIs (large-scale integrated circuits) and the like, circuit patterns are becoming finer in order to increase the degree of integration and the operation speed thereof. In order to form such fine circuit patterns, reduction projection apparatuses having vacuum-ultraviolet exposure light sources are widely used. The resolution of such a reduction projection exposure apparatus depends on the exposure wavelength λ and the numerical aperture NA of the projection optical system. In conventional exposure apparatuses, an approach of increasing the numerical aperture NA is adopted in order to improve the resolution. --

Page 8, delete the entire paragraph beginning on line 19, and replace it with the following new paragraph.

-- Since the wavelength of the X-rays used for exposure is between about 20 nm and ~~40~~ 4

nm, the theoretical resolution determined by the wavelength of the exposure light is improved. --

Page 11, delete the entire paragraph beginning on line 23 and ending on page 12, line 12, and replace it with the following new paragraph.

-- The mask supporting device for holding the mask 1 comprises an electrostatic chuck 2 for attracting the mask 1, a plurality of pin-shaped projections 6 formed on portions thereof, a pressure sensor (attracting-force detection means) 11 for detecting an attracting force for the mask 1, an attraction control unit 12 for calculating the attracting force from the result of detection of the pressure sensor 11, a voltage control unit 10 for outputting a voltage for controlling the attracting force from the attracting force calculated by the attraction control unit 12, and a driving control unit 9 for effecting scanning movement of the mask 1. A supply tube 7 for supplying voids formed between the projections 6 with a cooling gas (such as helium or the like), and a recovering tube 8 for recovering the gas introduced into ~~the~~ the voids are also provided. --

Page 14, delete the entire paragraph beginning on line 6, and replace it with the following new paragraph.

-- $\{(\text{the mass of the mask}) \times (\text{acceleration due to gravity} + \text{the maximum acceleration of the mask while being moved}) / (\text{the maximum coefficient of static friction between the mask and the mask chuck})\} \times (\text{safety factor}) < \text{the attracting force} \text{ --- (1),}$

wherein (the attracting force) is defined by: (the generating ~~force of the electrostatic~~ electrostatic force) - (the differential pressure between the pressure of the cooling gas and the atmosphere pressure of the inside of the entire apparatus). --

Page 22, delete the entire paragraph beginning on line 20 and ending on page 23, line 6, and replace it with the following new paragraph.

-- When the electrostatic chuck 32 is expanded or contracted, since the mask 31, attracted and constrained thereon, is simultaneously expanded or contracted, it is possible to correct the position deviation of the pattern of the mask 31. The temperature of the electrostatic chuck 32 is corrected by measuring, in advance, the relationship between the amount of shift of the pattern of the wafer after exposure and the change in the temperature of the electro-static chuck 32, and by controlling the temperature of the electrostatic chuck 32 by the temperature control unit 41 so as to minimize the amount of shift of the interval between patterns on the wafer based on the obtained data. --

Page 23, delete the entire paragraph beginning on line 19, and ending on page 24, line 17, and replace it with the following new paragraph.

-- FIG. 5 is a flow chart of a method for manufacturing semiconductor devices (semiconductor chips of ~~IC's~~ ICs (integrated circuits), ~~LSI's~~ LSIs (large-scale integrated circuits) or the like, liquid-crystal panels, ~~CCD's~~ CCDs (charge-coupled devices) or the like) using the above-described X-ray projection exposure apparatus. In step 1 (circuit design), circuit design of semiconductor devices is performed. In step 2 (mask manufacture), masks, on which designed circuit patterns are formed, are manufactured. In step 3 (wafer manufacture), wafers are manufactured using a material, such as silicon or the like. Step 4 (wafer process) is called a preprocess, in which actual circuits are formed on the wafers by means of photolithography using the above-described masks and wafers. Step 5 (assembly) is called a postprocess which

manufactures semiconductor chips using the wafers manufactured in step 4, and includes an assembling process (dicing and bonding), a packaging process (chip encapsulation), and the like. In step 6, (inspection), inspection operations, such as operation-confirming tests, durability tests, and the like, of the semiconductor devices manufactured in step 5 are performed. The manufacture of semiconductor devices is completed after passing through the above-described processes, and the manufactured devices are shipped (step 7). --